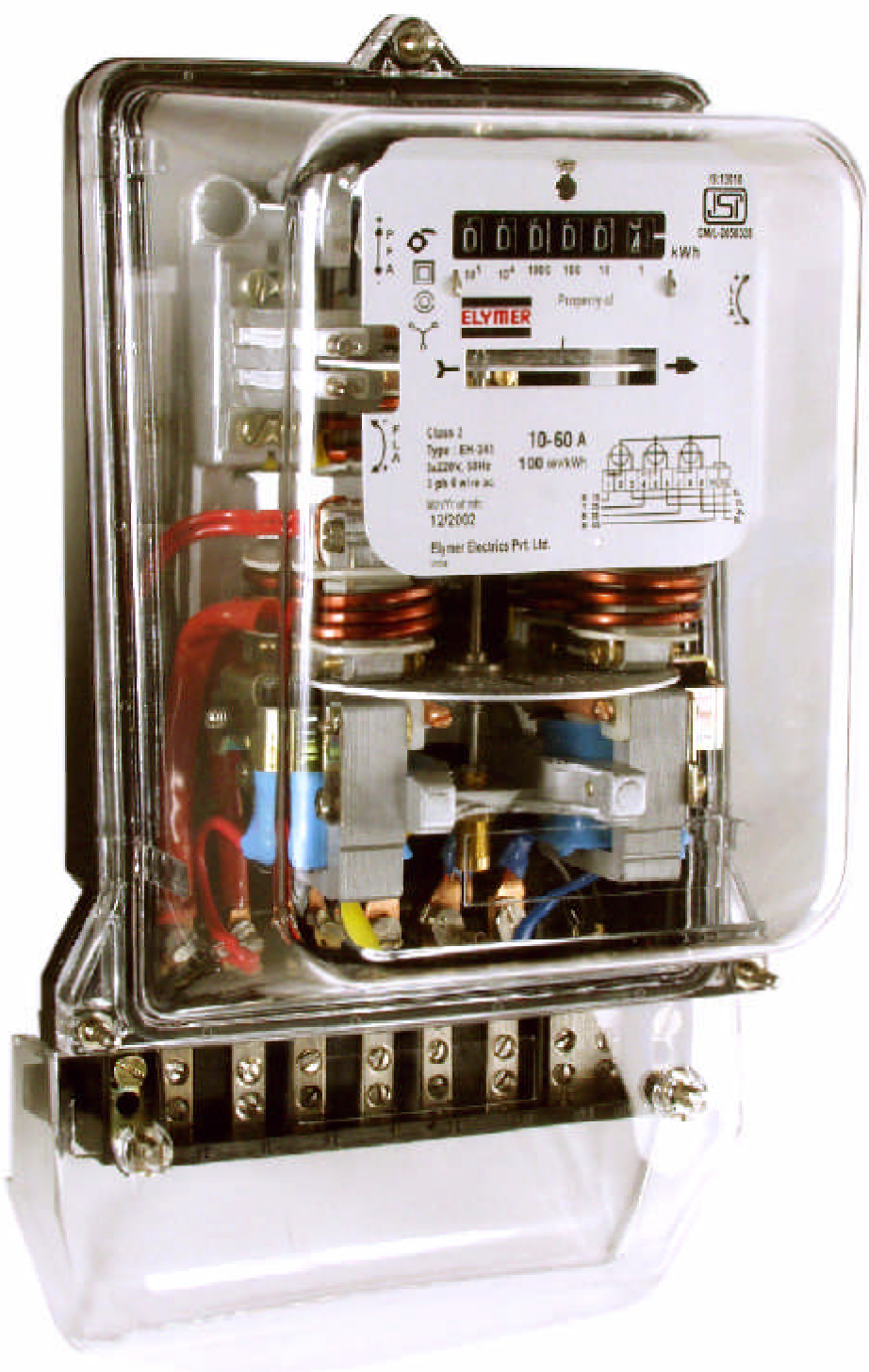
ELYMER



## PRESENTATION

For over two decades, ELYMER group has led the manufacturing of watt-hour meters for domestic applications in India. With a present capacity of one million meters per annum, backed by the engineering expertise and commitment to excellence the group leads the metering industry in India.

### Application

Elymer electromechanical electricity meters are suitable for measuring active energy (kWh)-

in single phase for direct connection upto 100A.

in three-phase four-wire networks at balanced or unbalanced load for direct connection upto 120A.

in three phase three or four wire networks for CT operated measurement at balanced or unbalanced load.

Elymer meters are designed and manufactured to ensure:

- measuring accuracy and stability
- safety against extreme environmental effects
- safety against electric shock hazards and spread of fire
- compatibility with the specific requirements of the various markets.

### Specifications

All measuring and technical characteristics comply with requirements of IEC 60521, IS:13010, and BS 5685, with their latest amendments, and various other national specifications.

The products have been certified at various test laboratories of national and international repute.

### Application

The standard three phase meter is intended to measure active electrical energy in three phase, four wire networks.

They are available in various direct operating versions.

| | |
|---|---|
| EH-341 | 5-10A 10-20A, 5-20A 10-40A, 20-80A |
| EH-341/5 | 5-25A, 10-50A 20-100A |
| EH-341/6 | 10-60A, 15-90A |

The standard meters are surface mounting bottom connected type.

M: Magnetic Suspension Bearing

S: Short terminal cover

C: Larger digit drum size (6.9 x 3.7mm)

J: Jumping figure type counter (available with large digits only)

### Cyclometer Register

The register is cyclometer type with six digit wheels moulded from self-lubricating acetal copolymer, dimensionally stable to wide temperature variations. The readings are shown in kWh with no decimal (or one decimal) without using any multiplication factor. The periphery of last drum is subdivided into 100 sections.

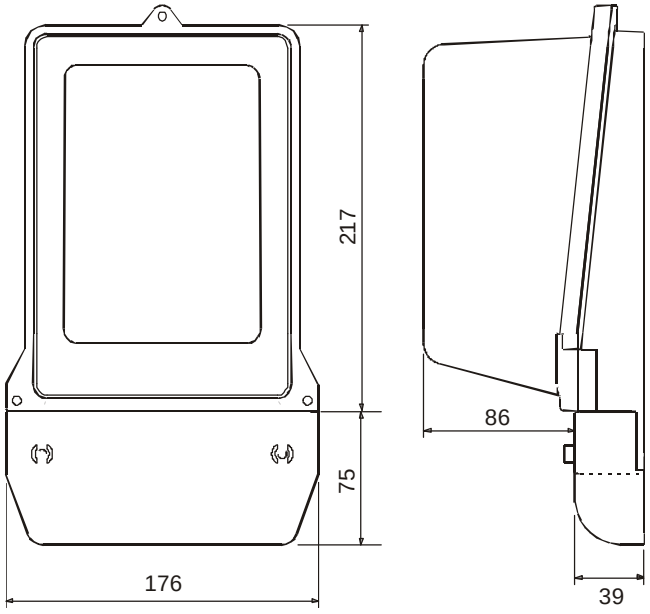
The low friction register does not require any kind of lubrication. The fictional torque of the register is negligible even at low loads and does not change with time.

The register framework is fastened to the meter frame duly guided for accurate placement, so that worm and worm wheel is properly engaged even when the counter is replaced.

The digit size of 5x3mm. Large digit size of 6.9x3.7mm is also available optionally.

Meters are fitted with a reverse running stop device with hardly discernible friction, having no effect on meter accuracy.

**Physical and mounting dimensions** (in mm)



**Rotor Mechanism**

The two rotor discs is made from high purity and high conductivity aluminium, is graduated in 100 divisions on its upper surface for accurate calibration and testing.

Removal and reassembly of the rotor disc assembly is simple without involving any alteration to the original positioning. The worm on the rotor spindle and worm wheel connecting to the cyclometer is made self lubricating long life polymer.

The direction of rotation is from left to right when viewed from the front of the meter.

**Terminal Block**

The terminal block is moulded from insulating non-hygroscopic flame retardant phenolic compound, highly resistant to creep current. It is fitted into the base, so that access to meter interior is not possible when the cover is on.

The incoming and outgoing terminals are made of solid brass, with two screws in each terminal to accept cables up to 16 $mm^2$ for and up to 40A and 35 $mm^2$ for and up to 100A.

The flashover and creep distances, between metal parts of individual circuits on one hand, and terminal and outside contact parts on the other, are large enough to assure high breakdown strength. The extended lower part of base protects terminal block against mechanical effects.

**Braking Element**

The high energy brake magnet functions independent of the position of the disk in the electromagnetic gap. It is made of four pole Alnico magnet with high coercivity die-cast in SiAl alloy, is securely fixed to steel meter frame, and is insensitive to external magnetic fields or an accidental short circuit.

Adequate temperature compensation is provided.

**Accessible Adjustments**

All calibration facilities are capable fine adjustment with adequate range.

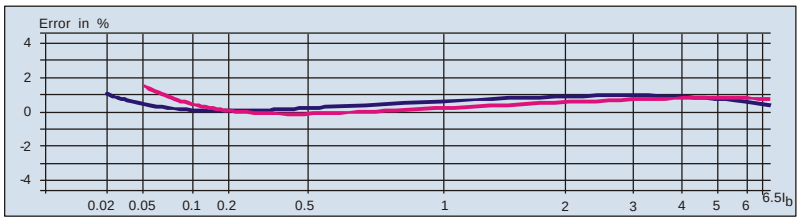
1. **High load adjustment** by shunting the flux of the four pole magnet, which is rigidly fixed to the frame, and changing the braking torque on the disc.

2. **Low load adjustment** that balances the effect of the voltage circuit flux.

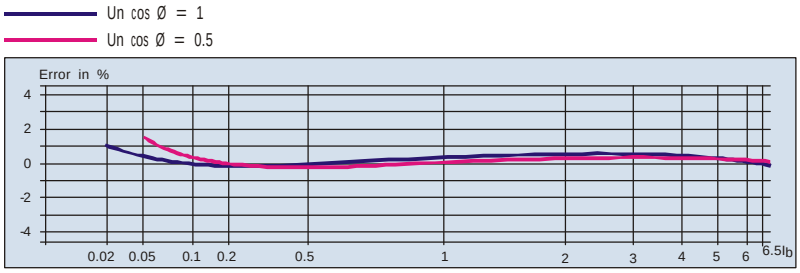
3. **Phase shift/Inductive load adjustment** varying the resistance of current flux shunt on a resistance strip.

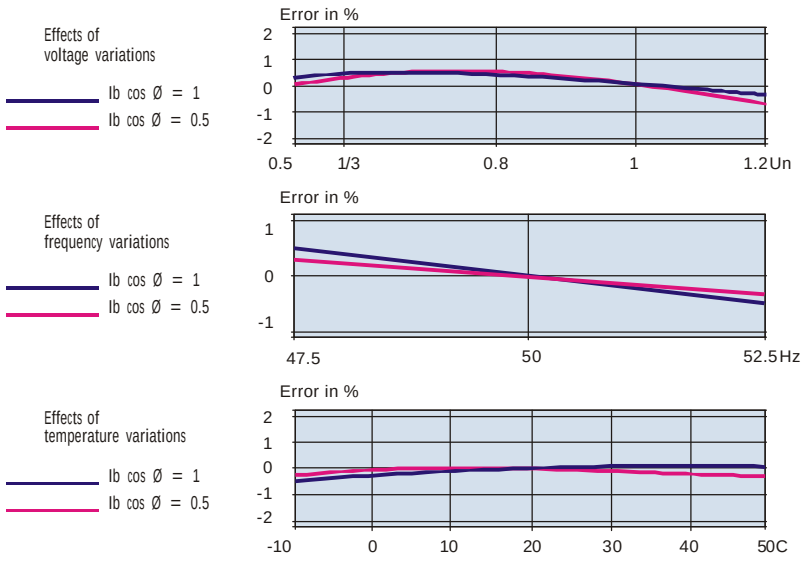
4. Phase balancing with respect to Y is provided on R and B phase.

Typical Load curves - individual phase




Typical Load curves - balanced load



TECHNICAL INFORMATION

| | |
|---|---|
| **Reference Voltage ($U_n$)** | 3x220-230/240V |
| **Frequency** | 50 Hz (±5%) |
| **Rated Thermal Current** | >120% of $I_{max}$ |
| **Accuracy Class** | Class 2 |
| **Starting Current** | 0.5% of $I_b$, at $U_n$ and unity pf |
| **Voltage Creep** | No creep at 75% and 120% $U_n$ |
| **Rotor Weight** | 41.0 g (with jewel bearing)<br>46.2 g (with suspension bearing) |
| **Torque** | $I_{max}/I_b$ = 2; > 9.6 gm-cm at Ib<br>$I_{max}/I_b$ = 4, 6; > 8.1 gm-cm at Ib |
| **Voltage circuit loss** | < 0.98 W, 3.9 VA per phase |
| **Current Circuit loss** | 0.36 VA (0.27 W) at rated current |
| **Dielectric Test** | 50 Hz, 2500 V Pc |
| **Insulation Resistance** | More than 20 M-ohm at 500Vdc |
| **Voltage Shock** | 10 KV Impulse Voltage, 1.2/50 |
| **Adjustment Range** | |
| 5%, Upf | more than 12% |
| Imax/2, Upf | more than 7% |
| Imax/2, 0.5 pf | more than 1.6% |
| **Meter Weight** | 2.95 kg (approx.) |
| **Relevant Standard** | IS:13010, IEC 60521, BS 5685 |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